IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A computerized method for determining an allocation of software and data components in a distributed system, the method comprising:

modeling a target system, the system having a plurality of computing resources;

determining a set of couplings in the target system, said couplings including couplings selected from the group comprising: control couplings, data couplings and peripheral couplings;

prepartitioning the set of couplings;

preallocating each coupling in the set of couplings to one of the plurality of computing resources;

interleaving the preallocated data and ~~code partitioning~~ control couplings;

defining a set of components according to the interleaved and preallocated couplings, the components having a data and a code segment; and

determining a modularity of the set of components.

2. (Original) The computerized method of claim 1, further comprising:

determining a computer hardware resource based on the determination of the modularity; and

interleaving the data and the code segment of each of the components.

3. (Original) The computerized method of claim 1, further comprising:

assigning each component of the set of components to a computer hardware resource based on the determination of the modularity; and

interleaving the data and the code segment of each of the components.

4. (New) The computerized method of claim 1, further comprising determining a coupling strength for a coupling in the set of couplings.

5. (New) The computerized method of claim 4, wherein the coupling comprises a control coupling and the coupling strength is determined using a value selected from the group comprising: a task latency for a task in the control coupling, a timing strength, and a frequency strength.

6. (New) The computerized method of claim 4, wherein the coupling comprises a data coupling and the coupling strength is determined using a value selected from the group comprising: a latency value, a timing strength, a frequency strength, and a bandwidth strength.

7. (New) The computerized method of claim 4, wherein the coupling comprises a peripheral coupling and the coupling strength is determined using a value selected from the group comprising: a latency value, a timing strength, and a frequency strength.

8. (New) The computerized method of claim 1, further comprising:

calculating bottleneck ratios; and

ordering evaluations of couplings based on bottleneck ratios.

9. (New) A computer-readable medium having computer executable instructions for performing a method for determining an allocation of software and data components in a distributed system, the method comprising:

modeling a target system, the system having a plurality of computing resources;

determining a set of couplings in the target system, said couplings including couplings selected from the group comprising: control couplings, data couplings and peripheral couplings;

prepartitioning the set of couplings;

preallocating each coupling in the set of couplings to one of the plurality of computing resources;

interleaving the preallocated data and control couplings;

defining a set of components according to the interleaved and preallocated couplings, the components having a data and a code segment; and

determining a modularity of the set of components.

10. (New) The computer-readable medium of claim 9, wherein the method further comprises:

determining a computer hardware resource based on the determination of the modularity; and

interleaving the data and the code segment of each of the components.

11. (New) The computer-readable medium of claim 9, wherein the method further comprises:

assigning each component of the set of components to a computer hardware resource based on the determination of the modularity; and

interleaving the data and the code segment of each of the components.

12. (New) The computer-readable medium of claim 9, wherein the method further comprises determining a coupling strength for a coupling in the set of couplings.

13. (New) The computer-readable medium of claim 12, wherein the coupling comprises a control coupling and the coupling strength is determined using a value selected from the group comprising: a task latency for a task in the control coupling, a timing strength, and a frequency strength.

14. (New) The computer-readable medium of claim 12, wherein the coupling comprises a data coupling and the coupling strength is determined using a value selected from the group comprising: a latency value, a timing strength, a frequency strength, and a bandwidth strength.

15. (New) The computer-readable medium of claim 12, wherein the coupling comprises a peripheral coupling and the coupling strength is determined using a value selected from the group comprising: a latency value, a timing strength, and a frequency strength.

16. (New) The computer-readable medium of claim 9, wherein the method further comprises:

calculating bottleneck ratios; and

ordering evaluations of couplings based on bottleneck ratios.